# https://encrypted-tbn3.google.com/images?q=tbn:ANd9GcTLAZpQzmzAPnXtyNCq1onsRE4y0bvoWlMvd3YA8Lt715oLXEJxWAIT 5302 Intro Web Study Guide Module 4: JavaScript Basics Prepared by Jack G. Zheng, Spring 2015

## Overview and learning outcomes

JavaScript is a programming language at the web client side, interpreted and executed by browsers. It provides rich processing capabilities such as manipulating HTML, calculation, user input processing, etc., without unnecessary communications with a server (which is more efficient). The syntax of JavaScript is similar to Java. You should have completed the first programming class so these basic programming techniques should not be a problem to you. The only thing is that you need to pay more attention how JavaScript works with HTML.

1. Explain what JavaScript is and what it can do.
2. Practice and apply basic language elements of JavaScript.
   1. Script structure, position in a HTML page
   2. Statements and expressions
   3. Variables, data types
   4. Operators
   5. Control flow: if, switch, for, while
   6. Array
   7. Function
3. Create basic JavaScript applications:
   1. Generating simple dynamic HTML content
   2. Calculation
   3. Processing simple user input using textboxes and buttons.
4. Use browser tools for some basic script debugging.

## Reading list

1. Tutorial videos and examples. Please follow the following videos in order. Note the “DocType” in the video is an old version.
   1. JavaScript basics: <https://www.youtube.com/watch?v=h0yg6LeFShM>
   2. JavaScript function and event: <https://www.youtube.com/watch?v=LjJwDegeAZU>
   3. JavaScript debugging: <https://www.youtube.com/watch?v=-PxVBVyJJHU>
   4. JavaScript examples “js 1 examples.zip” provided by the instructor. Pay attention to example 7, 8 and 9 which are critical to the assignment.
2. Core online learning materials. Again, choose the one that fits to your learning style and technical foundation. Follow the tutorial to complete the hands-on examples.
   1. <http://www.w3schools.com/js/> - read the following sections and practice the examples online.
      1. JS Tutorial: “JS Home” to “JS Loop While”.
   2. Online tutorial <http://www.codecademy.com/tracks/javascript> - complete section 1 to 6 (until “Data Structures”).
3. References and more examples
   1. JavaScript references: <http://www.w3schools.com/jsref/default.asp>
   2. Examples: <http://www.w3schools.com/js/js_examples.asp>
4. Additional readings and resources
   1. <http://www.teaching-materials.org/javascript/>: lesson 1 and 2.
   2. <http://www.slideshare.net/TelerikAcademy/7-introduction-to-javascript>

## Task list

1. Research and discuss:
   1. JavaScript is executed all on the client side within the browser. What kind of task or applications do you think is best to be executed completely on the client side, without communicating with the server? Give an example. Please avoid repeating previous examples posted by other students.
2. Exercise (no submission; practice until you feel comfortable and confident to complete the assignment):
   1. Complete the JavaScript basics exercise after you completed all required readings and videos. Summarize all mistakes you have made during the exercise.
   2. Complete this quiz: <http://www.w3schools.com/js/js_quiz.asp>
3. Assignment: complete assignment #3.